RECORD OF DECISION

I-15 Corridor Final Environmental Impact Statement
Utah County to Salt Lake County
August 2008

1 DECISION

This document constitutes the Federal Highway Administration's (FHWA) Record of Decision (ROD) for the proposed Interstate 15 (I-15) widening and reconstruction, and complies with the requirements of the National Environmental Policy Act (NEPA) of 1969 and Section 4(f) of the Department of Transportation Act of 1966.

The Selected Alternative is the widening and reconstruction of I-15 from the South Payson Interchange in Utah County, to the 12300 South Interchange in Salt Lake County, a total of 43 miles. The Selected Alternative is derived from Alternative 4 in the Final Environmental Impact Statement (FEIS) and Final Section 4(f) Evaluation. In the FEIS, Alternative 4 included four options in the Provo/Orem area and three interchange options at the American Fork Main Street Interchange. The Selected Alternative is Alternative 4 with Option D in Provo/Orem and Option C at American Fork Main Street. The Selected Alternative is the same as the Preferred Alternative as identified in the FEIS, with the exception of a refinement in the design of the American Fork Option C interchange as described below.

The FHWA and Utah Department of Transportation (UDOT) are Joint Lead Agencies on the Environmental Impact Statement. On June 27, 2008, the FHWA and UDOT published the Notice of Availability for the FEIS and Final Section 4(f) Evaluation in the Federal Register.

1.1 Selected Alternative Description

The Selected Alternative will reconstruct I-15 between South Payson and 12300 South in Salt Lake County. It includes widening the I-15 mainline, and reconstruction or improvements at all interchanges. It also includes a new interchange at North Lehi. As an overview, the Selected Alternative includes:

- Reconstruction of I-15 from South Payson to 12300 South, including addition of general-purpose lanes to I-15;
- Extension of express lanes from University Parkway to US-6 in Spanish Fork;
- Reconstruction of existing interchanges;
- Construction of Option C [North Single Point Urban Interchange (SPUI)] at the American Fork Main Street Interchange;
- Construction of Option D (Flyover at University Parkway) in the Provo/Orem area;
- Construction of a new interchange at North Lehi;
- Improvements to bridges that cross the roadway;
- Improvements to connecting arterial streets;
- Construction of structures to accommodate new undercrossings at Provo 500 West and Orem 1200 North.

For the purposes of study in the EIS, the I-15 corridor was separated into four subsections. These are South Utah County, Central Utah County, North Utah County, and South Salt Lake County. The following sections describe the Selected Alternative within in each subsection.

1.1.1 South Utah County (South Payson Interchange to University Avenue Interchange)

In South Utah County, the Selected Alternative includes the addition of one general purpose lane in each direction between the South Payson and Benjamin Interchanges, two general purpose lanes in each direction between the Benjamin Interchange and the US-6 Interchange, one general purpose lane and one express lane in each direction between the US- 6 Interchange and the University Avenue Interchange, resulting in four general purpose lanes and one express lane in each direction. A new southbound auxiliary lane would be constructed between the North Springville Interchange and the South Springville Interchange. The Selected Alternative also includes reconstruction or improvements at seven interchanges (South Payson, North Payson, Benjamin, Spanish Fork Main Street, US-6, South Springville and North Springville) and replacement or reconstruction of 12 bridges or culverts.

1.1.2 Central Utah County (University Avenue Interchange to Pleasant Grove Interchange)

Mainline improvements in this section include the addition of one general purpose lane and one express lane in each direction between the University Avenue Interchange and the University Parkway Interchange, and two general purpose lanes in each direction between the University Parkway Interchange and the Pleasant Grove Interchange. Auxiliary lane improvements include one additional lane in each direction between each interchange from the University Parkway Interchange to the Orem 1600 North Interchange. The Selected Alternative also includes reconstruction of the Provo Center Street Interchange as a SPUI, replacement of the existing viaduct over the railroad tracks at Provo Center Street, a flyover ramp from southbound I-15 to eastbound University Parkway (Option D), and a direct connection to Utah Valley University, formerly Utah Valley State College, from the northbound I-15 exit at University Parkway.

In addition to these improvements, the Selected Alternative also includes reconstruction or improvements at four interchanges (University Avenue, Orem Center Street, Orem 800 North and Orem 1600 North) and the addition, replacement or reconstruction of 13 bridges or culverts.

1.1.3 North Utah County (Pleasant Grove Interchange to County Line)

Improvements in North Utah County include a new SPUI interchange at milepost 285 approximately 0.8 miles south of the Utah/Salt Lake county line. Mainline improvements include two additional general purpose lanes in each direction between the Pleasant Grove Interchange and the county line. Improvements also include one additional auxiliary lane in each direction between the Pleasant Grove Interchange and the American Fork 500 East Interchange, between the American Fork Main Street Interchange and the Lehi Main Street Interchange, between the Lehi 1200 West Interchange and Alpine Interchange, and between the Alpine Interchange and the new North Lehi Interchange. The Selected Alternative includes reconstruction or improvements at six interchanges in this section (Pleasant Grove, American Fork 500 East, American Fork Main Street, Lehi Main Street, Lehi 1200 West and Alpine). It also includes replacement or reconstruction of eleven bridges or culverts.

Since the publication of the FEIS in June 2008, a request was made by Lehi City and the public to modify the proposed preferred interchange alternative (Option C) at American Fork Main Street. After coordination with Lehi City, the City of American Fork, and local property owners, this proposed refinement has been adopted as part of the Selected Alternative. The refinement consists of removing the planned frontage road on the west side of I-15 and building an elevated intersection above the Union Pacific Railroad (UPRR) tracks. This refinement improves traffic circulation and emergency vehicle access by allowing a direct connection to the interchange west of I-15 on American Fork Main Street and access north and south on

7330 West in Lehi without out-of-direction travel. The refinement also removes an at-grade crossing of the UPRR tracks. This refinement was evaluated for impacts by applying the same methods and studying the same resources described in the FEIS. Based on the evaluation, there will not be any changes to the resources analyzed except for acquisitions. There will be one additional acquisition of an unoccupied house. As adopted, this refinement would not result in any additional environmental impacts alone or in combination with other projects, nor does it alter any conclusions reached in the FEIS or in this ROD. The design change is illustrated in Exhibit A.

1.1.4 South Salt Lake County (County Line to 12300 South Interchange)

The Selected Alternative includes the addition of two general purpose lanes in each direction between the Salt Lake County line and the Bangerter Highway Interchange and one auxiliary lane between the Bangerter Highway Interchange and the 12300 South Interchange. It includes reconstruction of the Bluffdale Interchange, and ramp modifications to the Bangerter Highway and 12300 South interchanges.

1.2 Cost Estimate

Planning level cost estimates were developed for the Selected Alternative. The project costs for the complete widening and reconstruction project were estimated to be 3.5 billion dollars in fourth-quarter 2008 U.S. dollars. This estimate includes construction, right-of-way, and all aspects of program and project management.

2 ALTERNATIVES CONSIDERED

As outlined in FHWA Technical Advisory T6640.8A, and pursuant to the Council on Environmental Quality (CEQ) Regulations in 40 CFR 1502.14 and FHWA's Regulations in 23 CFR 771.123(c), several alternatives, including a No Build Alternative, have been considered. Chapter 2 of the FEIS describes the alternative analysis in detail. The alternatives development and screening process was extensive and included numerous ideas from resource agencies and the public, as well as coordination among FHWA, UDOT, the Metropolitan Planning Organizations (MPOs), cities, and other stakeholders. During a two-year period, the alternatives development and screening process evaluated a full range of alternatives, two of which were advanced for detailed study.

The purpose and need of the project is to relieve 2030 peak hour congestion within the I-15 corridor. The screening criteria were used to evaluate alternatives to determine whether or not they met the project's purpose and need.

2.1 Screening Criteria

The criteria that were used to assemble and evaluate alternatives were based on the primary purpose and need, and on other secondary purposes and objectives. If an alternative did not satisfy a primary purpose and need criterion it was screened out, i.e., eliminated from further study. Satisfaction of secondary criteria was also considered, and complete or partial failure of an alternative to address these criteria was also noted and taken into account in refining and comparing alternatives. While alternatives were only screened out based on primary criteria, inconsistency with secondary criteria was also noted and considered as additional reasons in support of screening. Secondary screening criteria were not used to eliminate an alternative, but added to, or subtracted from, the merits of an alternative. The evaluation criteria are briefly described in the following text.

Primary Criteria

- Relieve I-15 Corridor Congestion: For purposes of screening, two objective evaluation measures were adopted to assess an alternative's consistency with the primary purpose and need of relieving unacceptable 2030 congestion in the I-15 corridor. The first measure included the 2030 forecast peak hour volume-to-capacity ratio (V/C) at five east-west screenlines located along the study corridor. At each of the screenline locations, the V/C was assessed for mainline I-15 and for major north-south arterials. A V/C above 1.0 was considered an indicator of excessive congestion. The second measure was the 2030 forecast peak-hour level-of-service (LOS) on mainline I-15, at the same screenline locations. An LOS of E or F along the screenline was considered an indicator of excess congestion. For purposes of comparing the alternatives and options that were carried forward for detailed evaluation, refined congestion evaluation criteria were applied. These criteria are the LOS on mainline I-15 and interchange components (including ramps, ramp termini intersections and intersections adjacent to ramp termini), and surface street delay in the general frontage road Provo/Orem area.
- Transit Improvements Cost Effectiveness: For each major transit improvement scenario under consideration, an assessment of cost effectiveness was made, based on an estimate of the following factors: Capital cost, operating cost, maintenance cost, and annual incremental cost per rider. This allowed a cost effectiveness comparison among the alternative transit scenarios. This criterion was only applied as a screening criterion after the initial screening.

Secondary Criteria

- Improve Regional and Intra-County Movement of People and Goods: To assess an alternative's consistency with the purpose of improving regional mobility, which for this EIS was defined as a transit-focused purpose, two objective measures were developed. The first was the 2030 forecast of daily transit trips between and within defined subareas within the study area. The second was the 2030 forecast of additional daily transit trips that would be taken within the study area utilizing a potential new transit facility. This allowed a comparison among the alternative transit scenarios.
- Environmental Issues of Concern: For purposes of screening, a general assessment of likely impact to major areas of environmental concern was considered for each alternative. This was subdivided into two evaluation sub-criteria: The built environment (likely impacts on existing homes, businesses, etc.) and the natural environment (likely impacts on significant wetland and wildlife resources, etc.). The appropriate resource specialists assigned a level of "minor," "minor to moderate", "moderate", "moderate to major", or "major" to each alternative, allowing a general comparison. For purposes of comparing the alternatives and options that were carried forward for detailed evaluation, a more detailed assessment of impacts to environmental resources was performed.
- Compatibility with Local and Regional Plans: Alternatives were assessed in terms of (1) whether the project or component under consideration is included in the applicable regional transportation plans (i.e., WFRC and MAG 2030 Regional Transportation Plans), and (2) whether the project or component was compatible with land use and transportation plans adopted by local governments (i.e., cities and counties along the study area corridor). With respect to the transportation plans, a characterization of "included", "partially included" or "not included" was assigned to each alternative. For local plans, a characterization of "compatible," "somewhat compatible" or "not compatible" was considered. Compliance with local and regional plans was not definitive in eliminating an alternative, but added to, or subtracted from, the merits of an alternative.
- Safety and Design Improvements: Alternatives were assessed for whether they would address the substandard roadway segments, ramps, and bridges that have been identified along the I-15 corridor in the study area. Alternatives were assigned either a "yes" or "no" for three different elements (improvements to bridge structures, traffic operation improvements, and safety improvements).

2.2 Alternatives Development and Screening

Based on public and agency input, 11 initial conceptual alternatives (10 build alternatives and the No Build) were assembled to provide and assess a range of approaches to address the purpose and need. A screening workshop to consider the initial alternatives was held on February 10, 2005. The following agencies were invited by FHWA and UDOT to participate: Federal Transit Administration (FTA), Utah Transit Authority (UTA), U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (USFWS), U.S. Department of Interior (DOI), Utah Department of Natural Resources (DNR), Utah Department of Water Quality , Utah Division of Forestry, Fire and State Lands, Utah Division of Parks and Recreation, Utah Division of Wildlife Resources (UTWR), Utah State Historic Preservation Office, and the Governor's Office of Resource Development. Environmental issues of concern were considered at a corridor level based on professional judgment and input from resource agencies. As a result of the initial screening, six alternatives were eliminated from further consideration for failing to meet the primary criteria listed above. For detailed information on the eliminated alternatives, please refer to Section 2.1.2.1 of the FEIS.

From the results of the initial screening, packages of multi-modal alternatives were defined that provided the highest likelihood of meeting the project purpose and need. The packaged alternatives were combinations of I-15 improvements, transportation management options, and transit options. Additional technical analyses and travel demand forecasting were conducted to provide a basis to evaluate these alternatives. Highway and transit combinations were modeled using the current (Version 6.0) WFRC/MAG regional model. The models evaluated both the function of the I-15 mainline and transit ridership.

Three screening workshops were held between April and July 2005. The same agencies invited to the initial screening were also invited to participate in these screenings. Environmental issues were considered at the corridor level based on professional judgment and input from resource agencies.

As a result of the alternatives refinement and screening, all packaged Alternatives that included Light Rail Transit (LRT) and Diesel Multiple Units (DMU) were eliminated due to high capital cost, transit operating cost, and incremental cost per new rider.

Based on the results of the alternatives refinement and screening, five alternatives were selected for further evaluation. These alternatives were renamed for the final screening and are as follows:

- Alternative 1: No Build
- Alternative 2: Transportation Systems Management (TSM)
- Alternative 3: I-15 Widening and Reconstruction
- Alternative 4: I-15 Widening and Reconstruction, plus Commuter Rail Transit (CRT)
- Alternative 5: I-15 Widening and Reconstruction, plus Bus Rapid Transit (BRT)

Following the identification of these five alternatives, UTA, FHWA and UDOT held a series of meetings to consider the final screening of alternatives. As a result of the final alternatives screening and refinement at these meetings, the following alternatives were eliminated from further consideration based on the primary criteria:

- Alternative 2: TSM
- Alternative 3: I-15 Widening and Reconstruction
- Alternative 5: I-15 Widening and Reconstruction, plus BRT

As a result, two alternatives were advanced for study in the EIS. These are Alternative 1: No-Build, and Alternative 4: I-15 Widening and Reconstruction, plus CRT.

2.3 Alternatives Considered in the EIS

The final result of the screening process was two alternatives being advanced for detailed study: the No Build (Alternative 1) and I-15 Widening and Reconstruction, with Commuter Rail Transit (Alternative 4). These are described below.

Commuter Rail

In November 2006, voters in Utah and Salt Lake counties approved a measure that resulted in complete local funding for construction by UTA of a commuter rail line in Utah and Salt Lake counties, which enabled commuter rail to move forward as a separate locally funded project. This was essentially the same project that was the transit component of the build alternative that was then being analyzed by the agencies for the I-15 Corridor EIS. In April 2007, FHWA, UDOT and UTA agreed that because the commuter rail project was locally funded and no federal funding or major federal approvals were required, and because construction was slated to begin in 2008, it was no longer appropriate for commuter rail to be considered as a part of a

proposed action or build alternative in the I-15 Corridor EIS. Instead, UTA studied commuter rail in an environmental disclosure document prepared pursuant to UTA policy, which was signed in January 2008.[1] For purposes of the EIS, commuter rail was removed as a component of the carried-forward build alternative, and incorporated into the No Build Alternative, which includes all existing, approved and planned transportation improvement projects through 2030.

Alternative 1: No Build

The definition of Alternative 1: No Build was revised to take into account both the advancement of CRT into UTA's local project development process and decisions made in the Mountain View Corridor EIS project regarding the location of the southern connection of the proposed Mountain View Corridor to I-15 in Utah County. As a result, Alternative 1 consists of the following elements:

- All highway and transit projects identified in the MAG Utah Valley 2030 Regional Transportation Plan (2005 adopted version);
- All highway and transit projects identified in the WFRC 2007-2030 Regional Transportation Plan (RTP);
- Proposed Mountain View Corridor as a freeway connecting to I-15 at Lehi 2100 North;
- Ongoing routine I-15 bridge and pavement preservation projects.

Alternative 4: I-15 Widening and Reconstruction

Alternative 4 would provide for major widening and total reconstruction of the existing I-15 facility, including the following:

- Addition of general purpose lanes;
- Extension of express lanes to US-6 in Spanish Fork;
- Reconstruction of existing interchanges. The Selected Alternative includes American Fork Main Street Option C, which includes a North Single Point Urban Interchange (SPUI);
- Construction of a new interchange (North Lehi);
- The Selected Alternative includes Option D in Provo/Orem, which includes a flyover at University Avenue and a roundabout;
- Reconstruction of bridges that cross over or under I-15;
- Improvement to cross-streets as needed to tie into the existing roadway. Cross-street widths are in accordance with the current RTP.

[1] Provo to Salt Lake City FrontRunner Final Environmental Study Report.

3 SECTION 4(f)

The Selected Alternative will permanently incorporate land from Section 4(f) properties into transportation facilities, resulting in a Section 4(f) use. In each case the property is a historic property, eligible for nomination to the National Register of Historic Places (NRHP). No parks, recreation areas or other kind of Section 4(f) property will be used. Most of the uses are determined to be *de minimis* impacts and no avoidance alternatives were considered, because *de minimis* satisfies Section 4(f). However, it was determined in the final evaluation that there were no feasible and prudent alternatives to the use of three Section 4(f) properties.

3.1 Use of Section 4(f) Properties

The final evaluation determined that there were no feasible and prudent alternatives to the use of three Section 4(f) properties. These are the Provo Viaduct, 150 West 300 South in American Fork and 360 West 200 South in American Fork.

The Provo Viaduct is a 1,442-foot long structure that carries Provo Center Street over the rail corridor just east of I-15, and provides access to I-15 southbound from Center Street. It will be demolished by the reconstruction of the Provo Center Street Interchange.

150 West 300 South in American Fork is a circa 1945 commercial building. 360 West 200 South in American Fork is a circa 1930 residence. Right-of-way needs in both locations require the demolition of the buildings. The FEIS considered three design options for the American Fork Main Street Interchange, and each of them requires the same use of these two properties.

3.2 Avoidance Alternatives and Measures to Minimize Harm to Section 4(f) Properties

By definition, a total avoidance alternative is a feasible and prudent alternative that would avoid all Section 4(f) resources. Alternatives that do not meet purpose and need are not considered feasible and prudent. Rebuilding I-15 through the 43-mile project area would result in the direct use (not *de minimis*) of only three Section 4(f) resources, after the application of all possible planning, avoidance, and minimization to the proposed improvements.

During the alternative formulation and screening process, multiple locational alternatives and multimodal alternatives were considered to determine if the primary purpose and need of relieving unacceptable congestion on the I-15 corridor could be achieved without rebuilding the mainline I-15 and its interchanges. No such alternative could be identified. In effect, this means that any alternative capable of meeting the project purpose and need must include, at a minimum, the I-15 rebuild and its attendant Section 4(f) uses, and that no locational avoidance alternatives exist.

3.2.1 Provo Viaduct

The existing viaduct is a two-lane roadway with no shoulders. Traffic models indicate that a minimum of five lanes is needed at this interchange and along Provo Center Street. The existing structure would not accommodate the required number or configuration of lanes. In addition, the location of the Provo Viaduct is incompatible with either a diamond or SPUI interchange on I-15 at this location, requiring that it be demolished.

To assess whether the viaduct might be avoided and left in-place, shifting of the proposed locations of the reconstructed Provo Center Street interchange to the north and to the south of the Provo Viaduct was considered. However, neither of these alternatives is a prudent and feasible avoidance or minimization alternative as outlined below:

- North Shift: The only potentially feasible location of the new interchange to the north of its proposed location would require the use of 10 historic properties that qualify for Section 4(f) protection. These 10 properties are among the 22 relocations (12 residential units and 10 businesses) that would be required under this alternative. The Selected Alternative at Provo Center Street would require only two business relocations and one direct use (not *de minimis*) of a Section 4(f) resource (Provo Viaduct). Because this alternative would actually impact more Section 4(f) resources, and require numerous additional relocations over the Selected Alternative, it is not a feasible and prudent avoidance or minimization alternative.
- South Shift: The only potentially feasible location of the new interchange to the south of its proposed location would require the use of six historic properties that qualify for Section 4(f) protection. These six properties are among the 11 relocations (four residential units and seven businesses) that would be required under this alternative. The Selected Alternative at Provo Center Street would require only two business relocations and one direct use (not *de minimis*) of a Section 4(f) resource (Provo Viaduct). Because this alternative would actually impact more Section 4(f) resources, and require numerous additional relocations, it is not a feasible and prudent avoidance or minimization alternative.
- Bridge Safety: The Provo Viaduct has been deemed structurally deficient and functionally obsolete, with a sufficiency rating of 31.5 from a possible 100 points under FHWA's and UDOT's Structure Inventory and Appraisal system. This qualifies the viaduct for demolition and replacement under the FHWA National Bridge Inspection Standards (NBIS). The bridge rail, approach rail and transition do not meet AASHTO design criteria for safety and are considered substandard. Leaving the structure standing creates a safety risk for the underlying railroad tracks, which in addition to their current traffic will carry commuter rail passenger trains when the Provo to Salt Lake FrontRunner begins operation.

Based on the above, it was concluded that no feasible and prudent avoidance alternatives exist for the Provo Viaduct, and that use of the Provo Viaduct, rather than the use of the many historic structures that would be taken under a north or south alignment shift, would result in the minimal Section 4(f) use, particularly since the Provo Viaduct would likely be demolished for safety reasons even if it could be avoided.

3.2.2 150 West 300 South and 360 West 200 South in American Fork

Within the American Fork area of I-15 near the Main Street interchange there are eight historic properties; two are located on the west side of I-15 and six on the east side. In addition, the Bicentennial Park (owned and maintained by American Fork City) is located on the east side of I-15. All these resources are provided protection under Section 4(f). Implementation of the Selected Alternative would require a direct use (not *de minimis*) of the two historic properties located on the west side of I-15, one at 150 West 300 South and the other at 360 West 200 South American Fork. These two Section 4(f) resources are discussed together because they are located in close proximity to each other; both are located west of I-15 within about 1,700 feet of each other. An eastern alignment shift was the only potential feasible and prudent alignment to avoid these Section 4(f) resources. However, an eastern alignment shift as a potential avoidance alternative was determined not to be a feasible and prudent avoidance alternative for the following reasons:

- Increased the number of Section 4(f) Uses (not *de minimis*): An eastern alignment would require the direct use (not *de minimis*) of five historic Section 4(f) resources and a direct use of

Bicentennial Park. Therefore, the Selected Alternative in this location actually causes the least net harm to Section 4(f) resources, by completely avoiding uses to the resources located on the eastside of I-15.

- Increased Environmental Impacts and Relocations that reach Extraordinary Magnitude: An eastern alignment shift would require the relocation of 22 residential properties located directly east of I-15. The Selected Alternative would require relocations at four properties; two of which are the Section 4(f) resources. Also, an eastern alignment shift would require impacting the Bicentennial Park.

The I-15 mainline alignment in this location was designed to minimize harm to Section 4(f) resources. Aligning and widening the I-15 mainline to the west results in a use of two Section 4(f) resources (150 West 300 South and 360 West 200 South). However, this same alignment avoids direct use (not *de minimis*) of seven Section 4(f) resources (six historic properties and the Bicentennial Park). The avoidance alternative for the two properties on the west side of I-15 is not considered prudent because it increases environmental impacts such as relocations, including the adverse effects on other Section 4(f) resources on the east side of I-15.

3.3 Mitigation

To comply with National Historic Preservation Act (NHPA) Section 106, consultation with the Utah State Historic Preservation Officer (SHPO) regarding NRHP eligibility and effects resulting from a proposed undertaking is required through preparation of a Determination of Eligibility/Finding of Effect (DOE/FOE). A DOE/FOE for this project was approved by the Utah SHPO in October 2007 and two addenda have also been approved by the Utah SHPO. Because this project will result in adverse effects and avoidance is not possible, a Memorandum of Agreement (MOA) has been prepared to outline responsibilities and measures to mitigate or reduce adverse effects. The Advisory Council on Historic Preservation (ACHP), certified local governments, and interested persons were notified of the potential adverse effects and invited to participate in development of the MOA. Signatories include FHWA, UDOT and SHPO. The MOA was signed May 15, 2008.

Mitigation of adverse effects to the Provo Viaduct will document the bridge to Intensive Level Survey (ILS) standards, set by the Utah State Historic Preservation Office. Mitigation efforts will also document approximately 30 post-WWII bridges in Utah County, to the same standard. For the two historic properties in American Fork, mitigation will document the historic structure on each parcel to ILS standards.

4 ENVIRONMENTAL IMPACTS, MEASURES TO MINIMIZE HARM, AND MITIGATION

The Selected Alternative will have impacts on the natural and built environment. All practical measures to minimize harm and mitigate impacts have been incorporated into the Selected Alternative. The Selected Alternative underwent a number of revisions to minimize adverse environmental impacts. Many potential impacts have been eliminated or reduced through modifications to the Selected Alternative throughout the environmental process. This section presents a summary of environmental impacts and mitigation. Exhibit B presents all of the mitigation commitments for the project.

4.1 Land Use

The Selected Alternative is consistent with the project area's land use plans. The project consists of improvements to the existing Interstate. Local land use plans have been developed around the Interstate. No impacts to land use were identified, therefore no mitigation is required.

4.2 Social and Demographic

The Selected Alternative will not have a negative impact on social or demographic aspects of the corridor, or interrupt community cohesion. Because no impacts were identified, no mitigation is required.

4.3 Environmental Justice

There will not be a disproportionate adverse effect on Environmental Justice populations; therefore, no mitigation is required.

4.4 Acquisitions and Relocations

The Selected Alternative will require 485 acres of right-of-way acquisition, and will relocate 15 residential units and 40 businesses. The design refinement described above for the American Fork Main Street Option C interchange will result in one additional acquisition of an unoccupied house. Where displacements will occur as a result of parcel acquisitions, compensation will be provided to affected property owners. Compensation for parcel acquisitions, including buildings and structures will be provided at fair market value. In providing compensation, the project will comply with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and the Utah Relocation Assistance Act (Utah Code Section 57-12). These regulations require that relocation services will be provided to all affected property owners without discrimination.

4.5 Farmlands

The Selected Alternative will also impact 4.92 acres of Prime Farmland; 11.07 acres of Farmland of Statewide Importance, and 3.54 acres of Farmland of Unique Importance, and 0.25 acres of Agriculture Protection Area. UDOT will maintain access to existing farmland and agricultural areas as part of the roadway design. Potential effects on the irrigation systems, including ditches, canals, and ponds, will be avoided or reconstructed as part of the final design. These facilities will be relocated and reconstructed to maintain continuity and use of the water delivery systems. UDOT will work with each farm owner on a case-by-case basis to determine the farm's eligibility for benefits under the Uniform Relocation Assistance and

Real Property Acquisition Policies Act of 1970 (URAA). Generally, UDOT will provide compensation for the expense of reestablishing farm enterprises and for fair market value of the buildings and land.

4.6 Economics

The Selected Alternative will have an overall net economic benefit to the region and the state by creating new jobs and an infusion of money into the economy.

4.7 Noise

The Selected Alternative will increase noise levels along the corridor. UDOT's Noise Abatement Policy will be used to determine mitigation for noise impacts through the use of noise barriers. The likely locations of noise barriers are shown in Section 3.7.4.1 of the FEIS on Figures 3.7-1 through 3.7-6 and on the conceptual design drawings in Volume II of the FEIS. UDOT's Noise Abatement Policy requires public and local government acceptance of each proposed noise barrier. Noise barriers will be further assessed during the design stage prior to construction.

In addition, construction activities would generate noise during the construction period. To reduce construction noise at nearby receptors, the following mitigation measures will be incorporated into construction plans and contractor specifications:

- Equipping construction equipment engines with mufflers, intake silencers, and engine enclosures.
- Turning off construction equipment during prolonged periods of nonuse to eliminate noise from construction equipment during those periods.

During the design/construction phase, UDOT will work with the affected cities to establish appropriate limitations that balance construction schedule and construction noise.

4.8 Air Quality

The Selected Alternative is not projected to result in a violation of the National Ambient Air Quality Standards (NAAQS). A carbon monoxide (CO) hot spot analysis was completed for the 2030 design year, and no CO exceedances were modeled at any of the subject intersections. In all cases, the modeled CO concentrations for the 2030 design year were less than 2006 existing conditions. In some cases, the modeled 2030 concentrations for the Selected Alternative exceeded those for 2030 No Build, but both are well below the NAAQS. Qualitative PM_{10} and $PM_{2.5}$ analyses do not indicate any adverse effects from the Selected Alternative. Regional vehicle traffic volumes and regional tailpipe emissions, and Mobile Source Air Toxics (MSAT) emissions will increase under the Selected Alternative, compared to the No Build Alternative, but regional tailpipe emissions for the 2030 design year are forecasted to be less than 2001 baseline emissions. Increases in Vehicle Miles Travelled (VMT) between 2001 and 2030 would be more than offset by the steady improvement in emissions from individual vehicles. Therefore, regional MSAT emissions for the Selected Alternative would decrease by 22% to 90% compared to 2005 baseline values. To minimize fugitive dust during construction activities, as required by Utah Department of Air Quality (UDAQ) Rule 307-309 (Fugitive Emissions and Fugitive Dust), the UDOT Specification Section 01572, (Dust Control and Watering) will be included in the project construction plans and design specifications. The contractor will also adhere to any local ordinances, if applicable. Additional mitigation measures for particulate diesel emissions could include installing emission control equipment on diesel construction equipment (such as particulate filters or traps, oxidizing soot filters, and oxidation catalysts) to the extent that is technically feasible.

4.8.1 Transportation Conformity Statement

EPA has established National Ambient Air Quality Standards (NAAQS) for criteria air pollutants. Portions of the I-15 corridor are currently either a nonattainment area or a maintenance area for carbon monoxide (CO) and particulate matter (PM_{10}). In the future it is likely portions of the corridor will be designated as nonattainment areas for the new ozone and $PM_{2.5}$ standards. Because portions of the corridor are currently designated as either nonattainment areas or maintenance areas, the I-15 project is subject to the federal Transportation Conformity regulation (40 CFR Part 93). The proposed project satisfies all requirements under the Transportation Conformity regulation as follows:

- Portions of the I-15 corridor are either nonattainment areas for PM_{10} or maintenance areas for CO. The Utah Department of Environmental Quality, Division of Air Quality (UDAQ) has prepared nonattainment plans and maintenance plans for PM_{10} and CO to support the State Implementation Plan (SIP).
- The proposed project is included in conforming regional transportation plans. Wasatch Front Regional Council (WRFC) and Mountainland Association of Governments (MAG) have prepared regional transportation plans that include the proposed I-15 improvement project. WFRC and MAG have prepared regional Transportation Conformity analyses to support their regional transportation plans. Those regional Transportation Conformity analyses demonstrate the regional tailpipe emissions from vehicles traveling within the region, including vehicles traveling on I-15, are forecast to be less than allowable on-road emission budgets specified by the SIP.

Project-level CO and PM_{10} hot spot analyses were conducted for the I-15 project in accordance with EPA guidelines. The quantitative CO hot-spot analyses used the CAL3QHC dispersion model, and demonstrated future traffic associated with I-15 ramps would not cause future ambient CO concentrations near the ramps to exceed the NAAQS. The qualitative project-level PM_{10} hot-spot analyses demonstrated that Utah Department of Transportation's roadway dust control measures will adequately reduce fugitive dust emissions to prevent PM_{10} concentrations near the freeway from approaching the NAAQS limits. In addition, the WFRC and MAG Transportation Conformity analyses demonstrated that forecast future regional primary and secondary PM_{10} tailpipe emissions are less than allowable regional emission budgets specified by the SIP.

4.9 Visual Quality

The Selected Alternative will not have any significant impact on the visual quality of the corridor. UDOT will apply Context Sensitive Solutions (CSS) principles and process to develop appropriate landscape treatments and incorporate appropriate aesthetic treatments for the highway design elements, including interchanges, noise barriers, retaining walls, and structures. The visual impact of these structural elements would be mitigated by incorporating architectural design elements that reflect local community or regional characteristics. In addition to replacing landscape features impacted by the modifications and/or reconstruction of the University Avenue, University Parkway and Pleasant Grove interchanges, the design of all other reconstructed and new interchanges would follow the CSS principles and process. Any natural vegetation and existing freeway landscaping that would be removed as part of the Selected Alternative would also be replaced through the use of landscaping to mitigate visual impacts.

4.10 Pedestrian and Bicycle Facilities

The Selected Alternative will accommodate the existing and planned pedestrian and bicycle facilities that are defined in the WFRC and MAG plans, and in city or county master plans.

4.11 Hazardous Materials

Three contamination sites are within 0.10 miles of the Selected Alternative, and there is low potential for impacts involving hazardous materials. For the two sites that will be impacted by the Selected Alternative (Payson Diesel, and a former service station), a Phase 2 Environmental Site Assessment will be conducted prior to final design and commencement of any construction activities. The results of the Assessment will determine what remediation measures, if any, will be required.

Otherwise, mitigation measures will be the same for all four I-15 geographic sections. In the event that soil and/or groundwater contamination is identified, UDOT (or the construction contractor) will be required to complete a remedial work plan to clean up the site with approval from the Utah Department of Environmental Quality and/or the Environmental Protection Agency.

Unknown contamination could also be encountered during excavation, earthwork, drilling, grading, demolition, and utility work. For structures to be demolished, a pre-construction survey for building materials containing lead-based paint, lead, asbestos-containing materials, and polychlorinated biphenyls (often found in light fixtures) will be conducted and any such materials will be disposed of appropriately.

The contractor will be required to abide by UDOT Standard Specification 01355 – Environmental Protection for the discovery of hazardous materials during construction, or discovery of any hazardous materials generated by the contractor. The Contractor will also develop and implement a project-specific hazardous waste contingency plan prior to construction activities.

4.12 Water Resources

The Selected Alternative will not adversely affect water quality, or impair any 303(d)-listed water body, or alter the beneficial use classification of any stream. A stream alteration permit from the Utah Department of Natural Resources, Division of Water Rights, will be required and obtained for the river and stream crossings that will result in a stream alteration or modification.

UDOT will be required to prepare specific design standards that ensure that the proposed project features (i.e., bridge abutments, footings, and other features in the floodplain) do not reduce the capacity of the channels upstream or downstream of the structures or increase channel erosion. During final design of the Selected Alternative, UDOT will undertake hydraulic modeling. These analyses will consider the final engineering of highway structures and drainage facilities across the floodplains, and indicate appropriate drainage mitigation to be implemented by UDOT, such as floodplain equalization culverts. UDOT will comply with local floodplain ordinances and permits.

UDOT will prepare a Stormwater Pollution Prevention Plan (SWPPP) and will incorporate Best Management Practices (BMPs) to minimize pollutants. The project will disturb more than one acre of ground surface, therefore a Utah Pollutant Discharge Elimination System (UPDES) is required. Selected BMPs will be used to prevent untreated runoff from leaving the limits of disturbance. BMPs will ensure that no untreated runoff from bridges or other structures will drain into streams or rivers.

For impacted wells located in the limits of disturbance, UDOT will either purchase the groundwater rights from the owner or pay for a transfer of the rights.

4.13 Vegetation and Invasive Species

Approximately 3.2 acres of riparian vegetation will be removed by the Selected Alternative. Removal of riparian vegetation will be minimized, where possible. Vegetation along river corridors that are impacted by equipment or other construction activities will be replaced with native riparian vegetation. During

design/construction, UDOT will develop an Invasive Weed Control specification which identifies BMPs that will be used to control the introduction and spread of noxious weeds on disturbed sites along the right-of-way. In compliance with Executive Order 13112, the Utah Noxious Weed Act, and subsequent guidance from the FHWA, the landscaping and erosion control included as part of the project will not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies. FHWA & UDOT will comply with the stipulations included in E.O. 13112, UDOT's Invasive Species Specification and the 404 permit.

4.14 Wetlands and Waters of the United States

The Selected Alternative will impact 46.07 acres of jurisdictional wetlands. These impacts will be mitigated through an individual Section 404 permit issued by the USACE in compliance with the Clean Water Act and Executive Order 11990. The USACE has concurred that the Selected Alternative is the least environmentally damaging, practicable alternative. In addition to limited on-site mitigation, the wetland mitigation plan for this project would include use of a wetland mitigation bank that UDOT is currently developing with the U. S. Army Corps of Engineers. Plans for the mitigation bank are not yet complete, but some of the known details are listed below:

- An Intra-Agency Review Team (IRT, formerly the MBRT) has been formed consisting of members from USACE, EPA, USFWS, FHWA, UDWR, and UDOT to oversee the development of a wetland mitigation bank in Utah County. The IRT supports the wetland mitigation bank as a preferred approach to mitigate unavoidable wetland impacts.
- The bank will be developed to mitigate the various wetland types (wet meadow, marsh, shrub-scrub, and forested wetlands) impacted by the project and mitigate the wetland functions (hydrology, biogeochemistry, and flora and fauna) provided by those wetlands.
- Sites are currently being investigated near Utah Lake for their potential to be successful wetland banks and more details will be disclosed as soon as they are determined by UDOT, FHWA, and the USACE.
- The service area for the bank extends from the Utah/ Salt Lake County line to SR-75 in Springville.
- In addition to compensatory mitigation, other protective measures include:
    - Where wetlands and riparian areas are adjacent to the limits of disturbance, UDOT will install protective fencing at the limits of the construction area, outside which all construction activities would be excluded. This will prevent incidental adverse effects on adjacent wetlands.
    - In areas with shallow groundwater or areas that frequently carry surface water flows, UDOT will install culverts or other water conveyance structures to maintain existing hydrologic connectivity. This will minimize impacts on wetland hydrology.
    - BMPs will be utilized during all phases of construction, including permanent BMPs after construction, which could include berms, brush barriers, check dams, erosion control blankets, filter strips, sandbag barriers, sediment basins, silt fences, surface roughening, or diversion channels. These will reduce impacts from sedimentation and erosion.
    - The design-build contractor will be required to comply with the conditions of the USACE Section 404 permit and UDOT Standard Specification 01574 Environmental Control Supervisor and 01571 Temporary Environmental Controls.

- Embankments, bridges, and culverts will be designed to minimize adverse impacts on wetlands, riparian areas, and drainages.
- Any changes to the construction plans by either the contractor or UDOT will require review and approval by the appropriate State or Federal agency if there is the potential for impacts on wetlands or waters of the United States not previously identified.
- Contract specifications will ensure that all contractors comply with Section 404 and Stream Alteration Permit conditions and of the various plans and measures developed to control and minimize wetland, riparian, and stream alteration impacts during construction. UDOT will monitor contractor activities to ensure all permit conditions are met.
- Restoration of temporarily disturbed wetlands would include rough grading, if necessary, and re-vegetation to approximate pre-project conditions.

4.15 Wildlife, Threatened and Endangered Species, and Special Status Plants

There is potential for the Selected Alternative to impact June Sucker, and critical habitat for Ute ladies'-tresses. A Biological Assessment was completed for the June Sucker, but no Ute ladies'-tresses were observed during surveys. The USFWS concurred with a finding of "may affect, not likely to adversely affect" for both of these species. The Selected Alternative design components that would minimize or mitigate potential wildlife impacts include those listed below. BMPs and other mitigation measures used for federally listed species will limit potential impacts to other sensitive species as well. There could be some minor impacts to non-listed wildlife species, as discussed in the FEIS, although the Selected Alternative is not likely to adversely affect them.

Avoidance, minimization, and mitigation measures will include the following:

- The landscape design for the reconstructed I-15 will include low-maintenance, low-wildlife-forage-value plant materials to avoid attracting wildlife to the I-15 right-of-way;
- UDOT will coordinate with USFWS prior to construction to determine if updated presence/absence surveys of Ute ladies'-tresses are needed;
- As practical, UDOT will time tree and shrub removal to occur during the non-nesting season of migratory bird species (approximately September 1 – April 30). If this is not possible, UDOT will conduct preconstruction surveys to determine whether active nests are present; active nests found in the area should be left untouched until the young have fledged;
- Raptor nests within the range of disturbance of project activities (refer to the USFWS *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* [2002]) will be surveyed prior to construction activity if the construction will occur during the nesting season. If an active raptor nest is identified, UDOT will coordinate with USFWS and/or UDWR to determine appropriate buffer distances and duration given the species and nest location.
- If bridge reconstruction must occur during the swallow nesting period (approximately May to July), existing nests will be removed prior to nesting occurring, and deterrence devices (such as tarps, netting, or Bird-X gel) will be employed to deter nesting.
- Minimize removal of riparian vegetation, where possible. Replace vegetation along river corridors that are impacted by equipment or other construction activities with native riparian vegetation, where appropriate, rather than containerized stock.

June Sucker mitigation measures include the following:

- As practical, confine construction activities that could impact spawning June Sucker at the Provo River crossing, to the August 1 through March 31 time period. These months are outside the spawning period, and would largely avoid any potential for adverse impacts on June Sucker. Any construction at the Provo River crossing during the spawning period will be coordinated with USFWS.
- If necessary to encroach on the stream channel of the Provo River, Hobble Creek, or Spanish Fork River, temporary cofferdams will be installed outside the spawning period, which is April 1 through July 31, to enclose all construction activities to prevent the discharge of pollutants. All activities will be limited to the work areas created by the cofferdams.
- Construction activities in the Provo River, Spanish Fork River and Hobble Creek will not encompass more than two consecutive spawning seasons.
- Construction activities that involve any disturbance to the river waters or associated drainages will attempt to avoid creation of isolated pools or stranding fish within microhabitats.
- Where isolated pools are formed, the UDWR or qualified personnel approved by the USFWS will be contacted to seine and remove any entrapped June Sucker.

4.16 Cultural and Paleontological Resources

The Selected Alternative will result in three adverse effects to cultural resources and avoidance is not possible. As a result, an MOA has been prepared to outline responsibilities and measures to mitigate or reduce adverse effects. The Advisory Council on Historic Preservation (ACHP), certified local governments, and interested persons were notified of the potential adverse effects and have been invited to participate in development of the MOA. The MOA was signed May 15, 2008. Mitigation of adverse effects to the Provo Viaduct will document the bridge to Intensive Level Survey (ILS) standards, set by the Utah State Historic Preservation Office. Mitigation efforts will also document approximately 30 post-WWII bridges in Utah County, to the same standard. For the two historic properties in American Fork, mitigation will document the historic structure on each parcel to ILS standards.

If buried cultural resources, such as chipped stone, ground stone, historic debris, building foundations, or nonhuman bone, are inadvertently discovered during ground-disturbing activities, the contractor will follow the procedures detailed in UDOT's Standard Specification 01355, Part 1.13 (Discovery of Historical and Archaeological Objects). When unanticipated archaeological resources are uncovered in a contractor-furnished site, the contractor will notify the UDOT region archaeologist, who will determine the appropriate action to pursue regarding the resource.

Buried human remains that were not identified during research or field surveys could be inadvertently unearthed during excavation activities, which could result in damage to the human remains. If human remains of Native American origin are discovered during ground-disturbing activities, it is necessary to comply with state laws relating to the disposition of Native American burials, following state regulation Utah Code 9-9-401, the Utah Native American Graves Protection and Repatriation Act of 1992, and UDOT Standard Specification 01355, Part 1.13.

If potential paleontological resources are encountered before or during construction, the discovery procedures specified in UDOT Standard Specification 01355, Part 1.13, and Section G of the Memorandum of Understanding (MOU) between UDOT and Utah Geological Survey pursuant to Utah Code 63-73-19 will be followed.

4.17 Geology and Soils

Surface fault rupture is expected for an earthquake on the Wasatch fault of magnitude 6.5 or greater. Surface fault rupture hazard is generally not a concern for the project, except where the Wasatch fault crosses I-15 in Payson. The subsurface conditions and seismicity in Utah indicate that liquefaction is a significant hazard in some areas of the state. I-15 traverses zones of liquefaction potential ranging from high to very low. Review of geologic maps indicates that the project is not underlain by soil or rock that is expansive, collapsible, gypsiferous, or subject to piping. Surficial materials do not consist of limestone or karst (prone to sinkholes), peat (subject to excessive settlement when loaded), or sand dunes (subject to destabilization). Geotechnical investigations in accordance with UDOT requirements will be conducted as part of the design phase. The design of subsurface, pavement, and structures will be based on the recommendations of the geotechnical engineering analyses. The structures will be designed to meet seismic standards and specifications.

4.18 Construction

It is anticipated that at least two lanes of I-15 traffic, in each direction, would remain open during construction from Bangerter Highway to Spanish Fork. Two lanes would likely remain open from Spanish Fork to South Payson. There would likely be occasional temporary closures of I-15 during critical construction activities. The public would be informed in advance of any closures. Construction is anticipated to occur both night and day and on weekends. Mitigation commitments for environmental impacts from construction are documented in each resource's section above. A maintenance of traffic (MOT) plan, emergency services plan, a proactive public information program and a media relations plan will be developed and implemented to keep travelers and businesses advised.

4.19 Cumulative Impacts

Cumulative impacts were analyzed in accordance with Council on Environmental Quality guidance. Based on the scoping process and the potential for direct impacts from the I-15 project, UDOT and FHWA identified the five resources that could be affected by cumulative impacts. Other resources are not expected to be affected by cumulative impacts. The potentially affected resources are Farmlands, Air Quality, Water Resources, Wetlands/Waters of the U.S., Wildlife, Threatened and Endangered Species and Cultural Resources.

4.19.1 Farmlands

The Selected Alternative would result in a direct loss of about 79 acres or less of agricultural land. Other planned transportation projects would result in about 2100 acres of additional impacts to agricultural land. These projects would potentially increase impervious surface area, and could impact wildlife that use farmland as habitat. However, the main contributor will continue to be urban growth that will occur between 2002 and 2030 in the two counties. This growth and development will occur with or without the I-15 project. No data are available on the exact amount of agricultural land that will be converted to urban uses in the two counties but it is expected that there will be a greater-than-50% loss of agricultural land, or about 100,000 acres. Overall, due to the planned conversion of existing agricultural land to residential or commercial uses in the next 30 years, the cumulative impact on agricultural land is expected to be near a 50% loss of agricultural land. Overall, the I-15 project would contribute to less than 0.0001% of the total loss in farmland.

4.19.2 Air Quality

Regional modeling conducted by the WFRC and the MAG for the 2030 transportation conformity analyses demonstrated that all regionally significant transportation projects (including the I-15 project) would be in compliance with the NAAQS. Population growth in the air quality impact analysis area has had little effect on overall air quality as demonstrated by the continuing improvement in air quality throughout the region. Air pollutant emissions from the I-15 alternatives would increase slightly due to the increase in vehicle-miles traveled because of improved mobility.

Overall, the growth in the area by 2030 would likely be the same with or without the I-15 project. However, the project would help reduce regional traffic congestion and improve travel times, which could help maintain compliance with air quality standards. Improved travel times throughout the region would reduce idling emissions of CO and volatile organic compounds.

Vehicle emissions have continued to decrease substantially over time as Environmental Protection Agency (EPA) has imposed a series of tighter emission-control requirements on engine emissions. As the region's vehicle fleet becomes newer, it is expected that tighter emission standards will substantially offset the regional growth in vehicle-miles traveled. Although it is difficult to predict fleet-average emissions for 2030, it is expected that the more stringent federal regulation of motor vehicle emissions will continue to drive vehicle emissions even lower, thus helping to offset the growth in vehicle-miles traveled.

EPA is the lead federal agency for administering the Clean Air Act and has specific responsibilities for determining the health effects of MSATs. On March 29, 2001, EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources (66 Federal Register 17229). In its rule, EPA examined the impacts of existing and newly promulgated mobile-source control programs, including its reformulated gasoline program, its national low-emission vehicle standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur-control requirements, and its proposed heavy-duty engine and vehicle standards and on-highway diesel fuel sulfur-control requirements. Between 2000 and 2020, the FHWA projects that these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 67% to 76% and will reduce on-highway diesel particulate emissions by 90%.

In February 2007, EPA issued a final rule to reduce hazardous air pollutants from mobile sources. The final standards will lower emissions of benzene and other air toxics in three ways: (1) by lowering the benzene content in gasoline; (2) by reducing exhaust emissions from passenger vehicles operated at cold temperatures under 75 degrees Fahrenheit; and (3) by reducing emissions that evaporate from, and permeate through, portable fuel containers. Under this rule, EPA expects that new fuel benzene and hydrocarbon standards for vehicles and gas cans will reduce total emissions of mobile-source air toxics by 330,000 tons in 2030, including 61,000 tons of benzene. As a result, new passenger vehicles will emit 45% less benzene, gas cans will emit 78% less benzene, and gasoline will have 38% less benzene overall.

4.19.3 Water Resources

The Selected Alternative would increase the amount of impervious surface from the existing 730 acres to 1290 acres, which would increase the potential for stormwater pollution. However, the analyses conducted for the I-15 project showed that the increase in the amount of impervious surface would not change the beneficial-use classifications or further impair water bodies in the area. Reasonably foreseeable projects will further increase impervious surface area in Utah and Salt Lake counties. These projects would also be expected to comply with Clean Water Act and appropriate State regulations to ensure they will not adversely affect water quality. In addition, the I-15 project would include measures to control stormwater runoff and would use detention basins to minimize the amounts of pollutants that are discharged into nearby surface waters. Other transportation projects in the region are also not expected to contribute to major stormwater

runoff or reduce water quality because of the controls would be placed on each project to manage runoff and minimize water quality impacts.

4.19.4 Wetlands and Wildlife

The Selected Alternative would result in a loss of wildlife habitat that is primarily heavily disturbed roadway right-of-way and urbanized lands. This conversion of lands to additional I-15 right-of-way will be approximately 485 acres, and would be about 1% of what could be lost to anticipated development (about 40,000 acres by 2030). With the continued development along the Wasatch Front, much of the existing wildlife habitat on the valley floors would be lost. Future development along the Front could also segment wildlife habitat. Because the steep topography limits some development in the foothills, these areas would experience less impact to wildlife habitat.

Although other planned transportation projects could also result in impacts to wetlands, urban growth will likely cause the greatest impact to wetlands between 2002 and 2030. However, all projects subject to a Section 404 individual permit are required to identify the least environmentally damaging practicable alternative, which is the goal of the wetland assessment component of this EIS process. In addition, all projects, including those listed in the table of reasonably foreseeable projects, are required to complete a wetland delineation from which mitigation is determined through avoidance, minimization and/or some form of creation, restoration, or enhancement. No data are available on the exact amount of wetlands to be converted to urban uses because each project is treated independently by USACE. It is expected that all direct impacts will have to be mitigated for (through creation, restoration, or enhancement) within the general vicinity of the project to satisfy the federal policy of no net loss of wetland acres and/or function.

4.19.5 Threatened and Endangered Species

The study area includes critical habitat for the June sucker, a federally endangered species. Populations of Ute ladies'-tresses, which is federally listed as a threatened species, exist in Utah Valley, outside the project corridor. Because Ute ladies'-tresses depends on wetlands, the cumulative effects analyses for wetlands, above, also provides a trend for the Ute ladies'-tresses in the area. Future development in Utah and Salt Lake counties could also include critical habitat, however, the only critical habitat in the I-15 corridor is at the Provo River, for June Sucker, and future projects are expected to complete consultation pursuant to Section 7 of the Endangered Species Act.

4.19.6 Cultural Resources

The Selected Alternative will require ground disturbance, construction, and operation and maintenance activities. These activities will disturb comparatively small areas, and primarily affect right-of-way corridors that have already been disturbed. Although construction activities would contribute to the cumulative loss of integrity of significant historical properties in the regional area, the contribution would be avoided, minimized, and mitigated to the extent practicable.

4.20 Energy

The estimated 2030 daily operational energy consumption under the Selected Alternative is approximately 651,000 gallons of fuel or 84,820 million British Thermal Units (MBTUs). This is a slight increase over the No Build, but represents a small part of energy consumption in the state of Utah. Energy consumed during construction will be equal to about 28,400,000 MBTUs. This is less than five percent of the total energy consumed in Utah. Since there will be no adverse effects to energy consumption, no mitigation is required.

5 MONITORING / ENFORCEMENT PROGRAM

All of the minimization and mitigation features described above, including the MOA, will be incorporated into all appropriate construction specifications and contracts, including any special conditions included in permits required for the project. Section 3.23 of the FEIS presents a list of all permits required by the project. This ROD represents a commitment to implement, monitor and enforce the measures described above and in the FEIS (see FEIS Appendix D, a copy of which is included as Exhibit B to this ROD) to minimize harm to the surrounding environment. Enforcement of the contract provisions and monitoring of the project is the responsibility of UDOT (via stewardship agreement with FHWA).

UDOT, the USACE and the IRT will finalize the selection of a wetland mitigation bank to mitigate impacts to 46.07 acres of wetland. UDOT and the USACE will determine where to mitigate impacts to wetlands that may fall outside the mitigation bank service area.

6 STATUTE OF LIMITATIONS

The FHWA will publish a notice in the Federal Register, pursuant to 23 USC 139(1), indicating that one or more Federal agencies has taken final action on permits, licenses, or approvals for this Project. After the notice is published, claims seeking judicial review of those Federal agency actions will be barred unless such claims are filed within 180 days after the date of publication of the notice, or within a shorter time period as specified in the Federal laws pursuant to which judicial review of the Federal agency action is allowed.

7 COMMENTS ON THE FEIS

Four comments on the FEIS were provided, one from the City of Orem, one from the City of Lehi, and one from the City of Bluffdale. The EPA also provided comment. Copies of the original letters are presented in Exhibit C. Comments are included below, with responses.

Appendix D of the FEIS mistakenly included a comment on the Draft Environmental Impact Statement from the Central Utah Water Conservancy District (CUCWD) among the comments received from the public, rather than with the comments received from State Agencies and included an erroneous response. To clarify, the CUCWD letter, and an accurate response, is presented in Exhibit D.

7.1 City of Orem (July 11, 2008)

Comment 1: Orem City requests UDOT review the Cities DEIS documented concerns from January 2008 (Attachment A – Mayor Washburn letter). The only thing that has changed is that we support UDOT's decision for Option "D" verses Option "A". Appendix "D" of the FEIS does not include responses to all of the concerns expressed in Mayor Washburn's letter.

Response: The I-15 team reviewed Orem's comments on the DEIS, and met with Orem City officials on July 16, 2008 to discuss their concerns. Each item of the letter was discussed. UDOT will continue to coordinate with Orem City as design progresses.

Comment 2: Several of the I-15 crossings are inconsistent with Orem City's adopted Resolution R-07-0023 (see Attachment A of Attachment A – Mayor Washburn letter). We appreciate the comments in the Appendix on page D-20 and D-21 that, all proposed crossings will be coordinated with Orem City to ensure that structures can accommodate roadway widths as adopted by the Orem City Council. In the main body of the FEIS the concept designs do not show bridge structures wide enough to accommodate our Transportation Master Plan. We request UDOT indicate in the main body of the document that all I-15 bridge structures need to be wide enough to accommodate adopted right-of-way widths in Orem over/under I-15, including:

- 1600 North
- 1200 North
- 800 North
- 400 North
- Center Street
- 400 South
- University Parkway
- 2000 South

Response: The design plans in the FEIS are preliminary concepts, and particular structure widths may not reflect what will actually be built precisely. While it is not possible to change the main body of the FEIS, UDOT acknowledges that bridge structures need to be wide enough to accommodate adopted right of way widths in Orem over/under I-15, as listed in Orem's letter and in the Resolution included in Exhibit C.

Comment 3: UDOT held a 1200 West Center Street Neighborhood meeting on March 18, 2008, where the southeast quadrant neighborhood expressed their concern that they did not want a connection to the new 1200 West Alignment. Staff expressed concerns that this proposal for no connection from 45 South and 80 South to 1200 West was not acceptable. The existing grade of 40 South connecting to 1000 West is very steep and already difficult to maneuver in winter conditions and not providing a connection to 1200 West creates long (over 1,000 feet) dead-end roadway(s) that are not compliant with Orem City Code or International Fire Codes (see Attachment B).

Response: The I-15 team has always expressed that access to 1200 West, as described above, will have to be approved by the City of Orem. This was expressed at neighborhood meetings, and in the FEIS response to the neighborhood's original comment (page D-28).

Comment 4: New Development areas north of 800 North near I-15 have projected the need for future dual left-turn lanes at 1200 West. Staff has provided copies of the CAD file illustrating the proposed intersection widening to UDOT, but the proposed design in Volume II, Central Utah County (Common Area), Sheet HWY 056.1 appears to be too narrow to accommodate the eastbound dual left turn lanes (Attachment C).

Response: Traffic analysis will examine the feasibility of dual left turn lanes, storage space and available width for dual turn lanes. UDOT will coordinate with Orem on this issue.

Comment 5: Orem City has received several concerns from residents and business owners along Sandhill Road that there are no sound walls shown in the document for the area from 2000 South to University Parkway (Attachment D). We suggest that further studies be conducted in this area, and that the study area include mitigating noise impacts to our City Park. Orem reiterates our desire and support for full sound walls along I-15 to mitigate impacts throughout the entire City.

Response: As design continues, UDOT will re-analyze the area between 2000 South and University Parkway. The final decision regarding noise walls will follow UDOT's Noise Policy, including the balloting of potentially benefitted receivers along the corridor.

Comment 6: We have concerns over the dramatic change in the illustrated design of Option D Flyover at University Parkway between the Draft Environmental Impact Statement (DEIS) with three travel lanes in each direction east of I-15 (Attachment E) that in the FEIS has been re-designed to two eastbound travel lanes before picking up the Flyover as the third lane east of Sandhill Road (Attachment F).

Response: Traffic modeling indicates that design shown in the FEIS is appropriate for anticipated traffic volumes. The Flyover operates as the third travel lane.

Comment 7: We also have concerns over the dramatic changes in the street volumes and level of service conditions in Tables 2.6, 2.7 and 2.8 between the DEIS (Attachment G) and FEIS (Attachment H documents).

Response: The Mountainland Association of Governments (MAG) updated their traffic model, which is reflected in the FEIS. The change in traffic numbers in the FEIS is a result of that change.

7.2 City of Lehi (July 22, 2008)

Comment 1: A new I-15 crossing (over or under) needs to be constructed at 2300 West. This would allow 2300 West to continue north of I-15 and connect to 3200 North and eventually SR-92 and will facilitate north south movement in the area without channeling traffic through the SR-92 or 1200 West freeway

interchanges. This I-15 crossing is shown on the current Lehi City Master Transportation Plan. The 2300 West crossing originated from the January 2007 Transportation Summit that was held at MAG. MAG also shows this 2300 West crossing on their current Regional Transportation Plan.

Response: Since Lehi's proposed crossing is not consistent with the purpose and need of this particular project, it will not be constructed with I-15 reconstruction. The crossing could go over the Freeway, independently of the I-15 project, and be studied as part of the 2300 West environmental document.

Comment 2: Both the Utah County trail master plan and Lehi City's trail plan indicate a trail crossing of I-15 to connect the Murdock Canal Trail to the Jordan River Parkway somewhere near the SR-92 interchange (final location has not been determined). The 2300 West crossing discussed in the comment above needs to be designed such that it accommodates this trail connection in addition to the road ROW.

Response: UDOT has proposed accommodating a grade separated trail crossing south of the 14600 South interchange in Draper City that will connect to the trail network.

Comment 3: The DEIS shows the construction of a new interchange in north Lehi, north of the existing SR-92 Interchange. We support an interchange in this vicinity, but believe this new interchange will function best at 4800 North, with an additional separate underpass at the Frank Ghery project site. This will allow better spacing between the existing SR-92 interchange and the new interchange. This new underpass will be needed to support local traffic between the Traverse Mountain and Frank Ghery projects and the west side of the freeway and also provide for a trail connection from the Murdock Canal Trail and Historic Southern rail Trail to the Jordan Parkway. It is crucial therefore, that the new interchange be shown at the 4800 North location and that a new underpass be added at the Frank Ghery project site.

Response: An interchange at 4800 North is not a part of this project. The FHWA studied a connection between I-15 and the Mountain View Corridor, with an interchange at 4800 North, and found that an interchange at the Point of the Mountain location would require a costly and extensive network of structures and ramps, and would present operational, safety and maintenance concerns. UDOT's current design concept accommodates the proposed trail along a portion of the east frontage road where the east frontage road is proposed to be relocated as a result of the widening of I-15 at the point of the mountain. UDOT will coordinate with UTA, Lehi City, Draper City and MAG as the design progresses.

Comment 4: The following existing I-15 crossings need to be widened/expanded as follows as per the current adopted Lehi City Master Transportation Plan:

- 600 East overpass needs to be widened to accommodate our master planned road size of 600 East of 44 feet of asphalt with 6 foot sidewalks.
- 100 East underpass needs to be widened to accommodate our master planned road size for 100 East of 38 feet of asphalt and 62 foot overall ROW width.
- 300 West underpass needs to be widened to accommodate our master planned road size for 300 West of 48 feet of asphalt and 70 foot overall ROW width.

Response: Proposed crossings will be built to accommodate roadway widths as described in Lehi's letter.

Comment 5: Lehi City and MAG are planning for a regional trail (Historic Southern Rail Trail) along the rail corridor owned by UTA. This 10 foot wide asphalt trail is currently being planned from the Lehi/American Fork boundary to the point of the mountain where it will continue north into Salt Lake County. A study is currently under way for the environmental and preliminary design of this trail. In order to accommodate this 10 foot wide trail, the existing I-15 underpass at US-89 needs to be widened. This trail also needs to be

considered with the widening of I-15 and reconstruction of the east frontage road at the Point of the Mountain to allow a safe trail corridor.

Response: UDOT will coordinate with UTA, Lehi City, Draper City and MAG as the design progresses to accommodate trail widths at the US-89 underpass.

Comment 6: The EIS shows three alternatives (A, B and C) for the American Fork Main Street interchange and the associated East West Connector (Pioneer Crossing Boulevard). Lehi City has recently held discussions with the East West Connector team about a new non-at grade crossing design for 850 East, where the East West Connector and 850 East intersect at the railroad tracks. We are highly supportive of this new non-at grade crossing design of 850 East. If this new design is incorporated into the EW Connector project, we support either option A or C in the I-15 FEIS. Without the non-at grade crossing, it remains our opinion that option B is the best option (this option shows the East-West Connector Road extending straight east into American Fork on 200 South and connecting into a SPUI with the combined railroad overpass structure adjacent to the SPUI).

Response: The new design, with a grade separated crossing at 850 East, has been incorporated and is described in Section 1.1.3 of this ROD. Option C will incorporate this new design, which is included in the Selected Alternative.

Comment 7: The following items need to be addressed with regard to the proposed 2100 North interchange improvements:

a. There needs to be a direct connection from southbound I-15 to US-89 (State Street) to alleviate traffic congestion and back-up on to the freeway. Currently at this interchange, the major traffic demand is from southbound I-15 traffic as it exits on the 2100 North interchange, and continues south into Lehi on US-89. The current design in the FEIS would require a right hand turn, weaving across 2100 North and then a left hand turn to get to US-89, which is not acceptable.

b. We have several comments with the proposed realigned frontage road on the north east side of the interchange. The proposed FEIS design shows the realigned frontage road with offset intersections at both 2100 North, which is a collector class road and 1200 West, which is an arterial class road. These offset alignments do not meet City standards.

c. By realigning the frontage road, all of the properties along 2100 North that are west of 900 West will end up on an extremely long dead end road. This resulting dead end or cul-de-sac far exceeds the City's standard for maximum cul-de-sac length of 400 feet. This must be resolved so that basic safety and access standards are met. No discussion about this realignment has been held between the City and UDOT. This issue was overlooked by the City in the draft EIS document, but had the City been aware of what was proposed, we would have made comments at an earlier date.

Response to a: Traffic modeling indicates the intersection will work at acceptable levels of service. UDOT will continue to coordinate with Lehi City on this issue during final design.

Response to b and c: The recent approval by Lehi City and development of the storage units at Lehi 1200 West has necessitated the offset of the intersection. Aligning the intersection would create additional impacts to Section 4(f) properties or existing businesses depending on the final design. UDOT will work with Lehi City during final design to develop a solution that is acceptable to both parties and consistent with Section 4(f).

7.3 City of Bluffdale (Received August 1, 2008)

Comment: We have noted the addition of a trail crossing under I-15. While this change is certainly an improvement over the DEIS, which provided no crossing, the location shown is well south of where we have historically planned for the trail connection. For some time, we have been planning on the trail heading west along 14600 South until it reaches approximately 650 West and then head south through a development that has received plat approval for the first phase containing the trail. As such, in order to facilitate the crossing shown on the FEIS, there will need to be land acquisitions or easements obtained that the city has not been planning to pursue. Had the trail come along 14600 South to the planned location at 650 West, the Right-of-Way has already been secured. Because of this, Bluffdale City requests that a crossing be maintained on FEIS, but that it occurs closer to 14600 South to utilize the existing trail accommodations.

Response: The crossing is located just south of the interchange ramps at 14600 South, and moving it north, inside the interchange, is not reasonable. UDOT will work with the cities of Bluffdale and Draper to determine crossing options.

7.4 U.S. Environmental Protection Agency (EPA) (July 30, 2008)

Comment 1: The EPA believes that the Preferred Alternative arguably represents the Least Environmentally Damaging Practicable Alternative (LEDPA), and has the least impacts to wetlands according to acreage and will reduce wetland impacts by 30% over other Alternatives. The highest number of acres of wetland impacts within the Provo/Orem segment resulted from the frontage roads, which were eliminated from the Preferred Alternative. However, we have concerns that the Preferred Alternative has greater impacts to higher quality wetlands, especially in American Fork, despite having the lowest total acreage of impacts. The American Fork Main Street Interchange area contains proportionally more Category 2 wetlands than the rest of the study area and the preferred American Fork Main Street Option C impacts 0.8 acres more of Category 2 wetlands than Option A, which has similar total acreage impacts.

Response: Wetland categories are taken from UDOT's wetland functional assessment method (WFAM). In a letter to UDOT, the USACE rejected the method that determines wetland categories. They stated, "the Corps is concerned that the WFAM is heavily weighted towards the wildlife functions. The Corps and other agencies (Federal Highway Administration, U.S. Fish and Wildlife Service, and Utah Division of Wildlife Resources) have been working with UDOT to develop and implement UDOT's proposed Northern Utah County Wetland Mitigation Bank (Corps project no. SPK-2007-01493). The Mitigation Banking Review Team's (MBRT's) discussions have lead to some adjustments in the calculation of Total Functional Points (Table 1) and Total Possible Points (not presented in Table 1 of the Report). These adjustments will also change the values of the Functional Units. In our MBRT meetings, we have also determined that the Functional Category designations have no utility in developing a mitigation bank accounting and credits system. Therefore, we do not agree with, and will not utilize the Functional Points and Functional Units data presented in Table 1 of the Report. The Corps will only use the raw WFAM data provided on the data sheets in the Report for the purposes of assessing the I-15 Project mitigation requirements." Therefore, the American Fork Option C interchange is the LEDPA according to acreage. The USACE's full letter is included in Exhibit D.

Comment 2: EPA has concerns with the Mobile Source Air Toxics (MSATS) language in the FEIS. EPA and FHWA have been negotiating language on MSATS for some time. We have not yet reached consensus regarding language both agencies agree on for inclusion in EISs. We also note that the draft transportation conformity determination has not been completed for this project. EPA requests a copy of the draft

conformity determination prior to issuance of the Record of Decision for our review. Regarding air quality mitigation, we note that the final document lacks specificity regarding construction impacts and mitigation measures. Best Management Practices (BMPs) for this project should include measures that would reduce particulate emissions from both construction diesels and fugitive dust.

Response: The MSAT language that appears in the FEIS is the language provided by EPA and FHWA at the time of publication of the FEIS based on coordination in early 2008. The conformity determination is included in the FEIS, in sections 3.8.1.4, 3.8.3.1 and 3.8.5. Thus, the Final EIS contains a draft project-level conformity analysis for the project. This conformity analysis addresses both CO and PM_{10}. The final conformity determination statement is included in section 4.8.1 of this ROD. The project is in a Conforming Plan and TIP, and the approach to this conformity determination has been similar to past projects in Utah. Appendix E of the FEIS (Section E.8) specifies mitigation for fugitive dust and fugitive emissions. Additional mitigation measures for particulate diesel emissions could include installing emission control equipment on diesel construction equipment (such as particulate filters or traps, oxidizing soot filters, and oxidation catalysts) to the extent that is technically feasible, and by turning off construction equipment during prolonged periods of non-use.

Comment 3: The Regional emissions estimates from project-influenced roads indicate a significant increase in carbon dioxide emissions between the Baseline and Preferred Alternative (approximately 478,000 tons per year). Please explain why this increase is not consistent with estimates contained in the *Mountain View Corridor* EIS of which indicate that the State's carbon dioxide emissions from highways are estimated to decrease by 6 % during the same timeframe.

Response: The 6 % reduction mentioned in the Mountain View Corridor EIS, and Table 3.19-4 of the I-15 FEIS, refers to a statewide reduction in CO_2 emissions from all Utah highways. The increase in emissions between the baseline and Preferred Alternative described in the FEIS refers to increases within the I-15 project area itself, and is based on Vehicle Miles Traveled (VMT). Therefore, the two numbers are not comparable. Regional vehicle traffic volumes and regional tailpipe emissions will increase under the Selected Alternative, compared to the No Build Alternative, but regional tailpipe emissions for the 2030 design year are forecasted to be less than 2001 baseline emissions. Increases in VMT between 2001 and 2030 would be more than offset by the steady improvement in emissions from individual vehicles.

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8 CONCLUSION

Based on the analyses and evaluation contained in this project's Final EIS and Final Section 4(f) Evaluation, and after careful consideration of all the social, economic, and environmental factors, and input from the public involvement process, it is the FHWA's decision to adopt I-15 Widening and Reconstruction as the Selected Alternative for this project.

Date: 8-15-08

for Walter C. Waidelich, Jr.
Division Administrator
Federal Highway Administration

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EXHIBIT A

Design Refinements for American Fork Main Street